WHAT IS CLAIMED IS:

1. A measuring graduation for position measuring systems, comprising a base body formed of a permanently magnetizable material and extending in a measuring direction, the base body having first and second sections alternatingly arranged one after another in the measuring direction and having, respectively, first and second magnetization directions, a position information being generated by a sensor displaceable relative to the base body in the measuring direction for scanning same, wherein the second sections are formed by magnetically weak regions, and wherein the second magnetization direction of the second sections is defined by the first magnetization direction of adjacent first sections.

2. A measuring graduation according to claim 1, wherein the second magnetization direction of the second sections of the base body is defined by a magnetic reflux of magnetization of the first section of the base body.

3. A measuring graduation according to claim 2, wherein the second sections of the base body are so arranged relative to the first sections of

the base body that the magnetic reflux, which is produced by a magnetic field generated by the magnetization of the first sections of the base body runs through the second sections of the base body.

4. A measuring graduation according to claim 1, wherein the second sections of the base body have predominant portions thereof surrounded, in a direction transverse to the second magnetization direction thereof, by respective regions of the first sections of the base body.

5. A measuring graduation according to claim 2, wherein the second magnetization direction of the second sections of the base body is substantially opposite the first magnetization direction of the first sections of the base body.

6. A measuring graduation according to claim 1, wherein the second sections of the base body have a smaller coercive filed than the first sections of the base body.

7. A measuring graduation according to claim 1, wherein the second sections of the base body have a smaller coercive field than the first

sections of the base body, at least upon being heated to a predetermined temperature.

8. A measuring graduation according to claim 1, wherein the second sections of the base body have a smaller critical temperature, with respect to magnetism, than the first sections of the base body.

9. A measuring graduation according to claim 1, wherein the magnetically weak regions are defined by recesses formed in the base body.

10. A measuring graduation according to claim 9, wherein the recesses form regions with a reduced material thickness along the second magnetization direction.

11. A measuring graduation according to claim 9, wherein the recesses are filled with a filling mass.

12. A measuring graduation according to claim 1, wherein the weak regions are formed symmetrical in such a way that viewed in the measuring direction, a symmetrical field distribution is provided on both sides of the base member.

13. A measuring graduation according to claim 1, wherein the weak regions, viewed in the measuring direction, have a contraction in a middle region thereof.

14. A measuring graduation according to claim 13, wherein the weak regions are bone-shaped.

15. A measuring graduation according to claim 1, wherein the weak regions are one of continuously narrow and widen from one end to another end.

16. A measuring graduation according to claim 15, wherein the weak regions have a tear drop shape.

17. A measuring graduation according to claim 1, wherein the base body is formed as a one-piece part.

18. A measuring graduation according to claim 16, wherein the base body is formed by injection-molding.

19. A measuring graduation according to claim 1, wherein the base body contains strontium ferrite.

20. A measuring graduation according to claim 1, wherein a flux guiding element is provided on one side of the base body.

21. A measuring graduation according to claim 20, wherein the flux guiding element is formed of a sheet metal containing at least one of iron and nickel.

22. A measuring graduation according to claim 20, wherein the magnetically weak regions are defined by recesses which are formed in the base body and which are filled with a filling mass, and wherein the filling mass serves as a glue for attaching the flux guiding element to the base body.

23. A measuring graduation according to claim 1, wherein the base body forms a graduation support for a linear graduation.

24. A measuring graduation according to claim 1, wherein the base body forms a graduation support for an angle graduation.

25. A position measuring system, comprising:

a measuring graduation having a base body formed of a permanently magnetizable material and extending in a measuring direction, the base body having first and second sections alternating arranged one after another in the

measuring direction and having, respectively, first and second magnetization directions, with the second sections being formed by magnetically weak regions and with the second magnetization direction of the second sections being defined by the first magnetization direction of adjacent first sections; and

at least one sensor displaceable along a longitudinal side of the base body in the measuring direction for scanning same for generating position information.

26. A position measuring system according to claim 25, comprising two sensors displaceable along opposite longitudinal side of the base body in the measuring direction.

27. A method for magnetizing a base body for a measuring graduation for a position measuring system and formed of a permanently magnetizable material and having first and second sections alternatingly arranged one after another in the measuring direction and having, respectively, first and second magnetization directions, the method comprising the step of magnetizing the base body in a homogenous outer magnetic field.

28. A method according to claim 27, wherein the second magnetization direction of the second sections of the base body is reversed

when the homogenous outer magnetic field does not act on the base body any more.

29. A method according to claim 28, wherein the second magnetization direction of the second sections of the base body is reversed by a magnetic reflux of magnetization of the first sections of the base body.

30. A method according to claim 27, comprising the step of magnetizing the second sections of the base body by using magnetic field having a direction opposite to that of the homogenous magnetic field.

31. A method according to claim 30, comprising the step of heating the base body before magnetization of the second sections of the base body.

32. A method according to claim 27, wherein the homogenous outer magnetic field is applied to the base body in an injection-molding machine for producing the base body.